(19) KOREAN INTELLECTUAL PROPERTY OFFICE (KR)
(12) Patent Application Publication (A)

(51) Int. Cl.: A61H 39/06

(11) Publication No.: 10-2004-0076395

(43) Publication Date: September 1, 2004

(21) Application No.:10-2003-0011732

(22) Filing Date: February 25, 2003

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Examination: Filed

(54) THERMAL THERAPEUTIC APPARATUS FOR INDIVIDUAL USE

[ABSTRACT]

A thermal therapeutic apparatus for individual use is disclosed. The apparatus having upper and lower treatment mats is integrally coupled to the upper portion of the foldable support. The apparatus is folded by the foldable support. The folded

apparatus is stored in a cover.

[Representative Figure]

Figure 1

[Index words]

thermal therapeutic apparatus, foldable support

[Description]

[Brief Description of the Drawings]

Figure 1 shows a separated perspective view illustrating a thermal therapeutic apparatus according to the present invention;

Figure 2 shows a perspective view illustrating an unfolded state of a thermal therapeutic apparatus according to the present invention;

Figures 3a, 3b, and 3c show a side view describing the folding processes of a thermal therapeutic apparatus according to the present invention;

Figure 4 is a perspective view illustrating a state where the thermal therapeutic apparatus of the present invention is stored; and

Figure 5 is a perspective view illustrating a conventional thermal therapeutic apparatus.

(Figure numerals)

100: upper treatment mat

110: lower treatment mat

120: treatment element

130: backbone adjustment device

200: middle support

210: middle frame

220: support frame

230: inner hinge plate

240: outer hinge plate

250, 251, 430: hinge

260: folding unit

300: upper support

310: fixing leg

320, 420, 421; wheel

330: handle

400: lower support

410: foldable leg

500, 510: spring

600: cover

700: coupling bolt

[Detailed Description of the Invention]

[Purpose of the Invention]

[Field of the Invention and Prior Art]

The present invention is related to a thermal therapeutic apparatus for individual use, and, more particularly, to a bed type thermal therapeutic apparatus for individual use which is folded by a foldable support. The folded thermal therapeutic

apparatus is stored in a cover.

Recently, as peoples are concerned about their health with rapid improvement of living standards, individual's thermal therapeutic apparatus is introduced to press, foment and adjust his/her backbone at comfort of their home. There have been also many studies that were performed for effective use of the thermal therapeutic apparatus.

The operation principle and configuration of the thermal therapeutic apparatus will be briefly described through an example. As shown in Figure 5, a conventional thermal therapeutic apparatus (Korean Utility Model Registration No. 0292042) is divided into an upper treatment mat 2 and a lower treatment mat 3. The upper treatment mat 2 supports the upper body of a user and the lower treatment mat 3 supports the lower body of the user. The upper and lower treatment mats 2 and 3 are organically coupled to each other, and embedded on a support 9.

A backbone adjustment device 8 is mounted lengthwise in the upper treatment mat 2, and allows treatment elements shaped as a roller 5 or an acupressure ball 5a to reciprocate back and forth. A foot acupressure plate 4 is installed in the lower treatment mat 3, and applies thermo-acupressure to feet. The backbone adjustment device 8 is configured such that, when a forward/reverse motor 6 is driven, a driving force transmission device (a belt, a chain, wires, etc.) moves right or left to allow the treatment element to respond. Here, the forward/reverse motor 6 is fixedly installed to the inner one side of the upper treatment mat 2.

When the thermal therapeutic apparatus 1 operates while the user is lying on it, the treatment elements contacting the backbone of the user are moved along his/her vertebrae which stimulates and performs acupressure. The treatment elements are implemented with a roller 5 or an acupressure ball 5a according to selection of the user.

Although the conventional thermal therapeutic apparatus 1 presses, foments and adjust a backbone of a user, since it is focused only on a function to effectively treat the backbone, and fixed to a support 9 which is formed as a single body and bed type, it has the following problems:

Firstly, the conventional thermal therapeutic apparatus requires a large carrying space because the manufactured support 9 is formed as a bed. To carry the conventional thermal therapeutic apparatus as a product, each support must be dissembled one by one and then assembled in a corresponding work site by a skilled person. Therefore, it is disadvantageous in that the conventional apparatus requires many skilled assembly people to assemble and install the product at a work site.

Secondly, the conventional thermal therapeutic apparatus assembled as a bed takes up a lot of space since it is not foldable.

Thirdly, the conventional thermal therapeutic apparatus 1 does not have a function to protect itself when it is not being used. Therefore, when an alien substance is entered and external elements are applied while it is not being used for a long period or time, it may not function properly and may require maintenance, thereby reducing its life span.

[Technical Subject of the Invention]

Therefore, the present invention was created to resolve the problem with the conventional art as described above and the object of the present invention is to provide a bed type thermal therapeutic apparatus which is folded to be stored by a foldable support adapted thereto and maximizes the utilization degree of a space since its installation space can be secured while it is not being used.

It is another object of the present invention to provide a thermal therapeutic apparatus which can be folded to be stored in a cover, thereby protecting against external elements and alien substance and extending its life span.

[Construction and Operation of the Invention]

The foregoing object of the present invention may be achieved by providing a thermal therapeutic apparatus that includes an upper treatment mat and a lower treatment mat, which is integrally fixed to an upper portion of a foldable support, such that it is folded by making use of the foldable support and covered to be stored by an additional cover.

Preferred embodiment of the present invention will be described in detail with the accompanying drawings.

Figure 1 shows a separated perspective view illustrating a thermal therapeutic apparatus according to the present invention. Figure 2 shows a perspective view illustrating an unfolded state of a thermal therapeutic apparatus according to the present invention. Figures 3a, 3b, and 3c show a side view describing the folding processes of a thermal therapeutic apparatus according to the present invention. Figure 4 is a perspective view illustrating a state where the thermal

therapeutic apparatus of the present invention is stored.

Like the conventional art, the thermal therapeutic apparatus A for individual use includes: a backbone adjustment device 130 allowing treatment elements 120 shaped as a roller or an acupressure ball to reciprocate back and forth; an upper treatment mat 100 on which the upper body of a user is placed; and a lower treatment mat 110 on which the lower body of the user is placed, in which the lower treatment mat 110 is embed to the lower portion of the upper treatment mat 100. The thermal therapeutic apparatus A is also used as a bed. However, the apparatus A according to the present invention differs from the conventional art in terms of operation of the treatment elements 120 associating with the backbone adjustment device 130, and its structure.

The bed type thermal therapeutic apparatus A has a hinge function to guarantee space for storage and safe keeping after it is folded. As shown in Figures 1 to 4, the thermal therapeutic apparatus A is divided into an upper treatment mat 100 and a lower treatment mat 110, and a foldable support B to allow the apparatus A to be folded.

The thermal therapeutic apparatus A requires a hinge means and a cover 600. The hinge means integrally connected to the upper portion of the foldable support B allows the apparatus A folded by the foldable support B to be pivotally kept, and the cover 600 covers the folded apparatus A to be stored safely.

The cover 600 is made of cloth or artificial leather and formed in such a way as to open its lower part to cover the folded

thermal therapeutic apparatus A.

The foldable support B used as the hinge means is divided into a middle support 200, and upper and lower supports 300 and 400. The middle support 200 is vertically installed to use at the center and functions as a middle leg to support a hinged portion in a state where it is unfolded. The upper and lower supports 300 and 400 are separated to both sides with respect to the middle support 200 to couple to hinges (250, 251). Here, the upper and supports 300 and 400 stand uprightly while they are downwardly folded with respect to the middle support 200.

There are springs 500 and 510 whose both ends are each connected between the lower end of the middle support 200 and the upper ends of the upper and lower supports 300 and 400, so that they can assist the apparatus A to perform smooth folding and unfolding operations. The elastic forces of the springs 500 and 510 allow the upper and lower supports 300 and 400 to easily fold when the apparatus A is being folded, and prevent the upper support 300 and the lower support 400 from a sudden unfolding operation when the apparatus A is being unfolded. For this reason, the user does not have to apply a large amount of force to the upper and supports 300 and 400 during folding and unfolding operations. The springs 500 and 510 may be each implemented to have a proper elastic force.

The middle support 200 is configured such that a middle frame 210 of a certain length is formed at the upper portion thereof, and a folding unit 260 is formed at both sides of the middle frame 210 to allow the upper and lower supports 300 and 400 to be

pivotally coupled to each other. Also, a support frame 220 is integrally formed to the lower portion of the middle frame to support the hinged portion in a state where the support frame 220 contact the bottom as the apparatus is unfolded.

As such, the folding unit 260 includes an inner hinge plate 230 which is firmly attached to both sides of the middle support 200, and an outer hinge plate 240 pivotally coupled to the upper and lower supports 300 and 400 using the hinges 250 and 251 when the upper and lower supports 300 and 400 are coupled to the inner hinge plate 230 using the hinges 250 and 251, such that the upper and lower supports 300 and 400 can smoothly perform hinge operations.

The upper support 300 is configured such that its one end is pivotally coupled to the folding unit 260 by the hinge 250 to be folded from the left side to the inside with respect to the middle support 200, and its another end forms a fixing leg 310 integrally fixed to the upper support 300. Here, the fixing leg 310 has a wheel 320 formed at the lower end.

The lower support 400 is located opposite the upper support 300. The one end of the lower support 400 is pivotally connected to the folding unit 260 by the hinge 251 to be folded from the right to the inside with respect to the middle support 200.

As such, a foldable leg 410 formed at another end of the lower support 400 requires to have rotation and supporting structures such that the foldable support B can be vertically folded when the thermal therapeutic apparatus A is folded, and maintain its folding state. For this, the upper end of the foldable

leg 410 is coupled to the lower support 400 by a hinge 430, and forms two wheels 420 and 421 at the lower end, which are spaced apart from each other at a certain distance, to maintain its folding state after the apparatus is folded.

The upper and lower supports 300 and 400 are unlike in terms of their lengths, in which the upper treatment mat 100 is fixedly coupled to the upper support 300 and the lower treatment mat 110 is fixed and coupled to the lower support 400, respectively. The lengths of the upper and lower supports 300 and 400 are determined such that the supports 300 and 400 can receive the upper and lower treatment mats 100 and 110.

The reference number 300 denotes a handle allowing a user to fold the thermal therapeutic apparatus A or to grip when he/she uses the thermal therapeutic apparatus A. The reference number 700 denotes a coupling member which is used to couple the thermal therapeutic apparatus A to the foldable support B.

The following is a description for using the thermal therapeutic apparatus A.

First, the first treatment mat 100 is positioned at the upper portion of the upper support 300 and the lower treatment mat 110 is positioned at the upper portion of the lower support 400. Thereafter, the thermal therapeutic apparatus A is fixed and coupled to the foldable support B using the coupling member 700.

After the apparatus A is integrally fixed to the foldable support B, a user operates it based on the method for operating the conventional thermal therapeutic apparatus.

To store the apparatus A in a cover, the user grips the handle

330 formed on the upper support 300 or the hinge portion, and slightly lifts up the middle support 200. Then, as shown in Figure 3b, since ends of the upper and lower supports 300 and 400 are coupled to both ends of the folding unit 260 by the hinges 250 and 251, respectively, the apparatus A is vertically lifted up with respect to the middle support 200.

At this point, since the springs 500 and 510 are always pulling the upper and lower supports 300 and 400, when the lower end of the support frame 220 is lifted above the upper end of the foldable leg 410 during the lifting operation, the upper and lower supports 300 and 400 naturally and vertically stands up to be folded by the elastic forces of the springs 500 and 510, as shown in Figure 3c.

In the folding operations, the fixing leg 310 is operated together with the upper support 300 because it is integrally fixed to the upper support 300. The foldable leg 410 is also fixed to the bottom through the two wheels 420 and 421 which are formed at the lower ends to perform the supporting function, and allows the lower support 400 to be rotated with respect to the hinge 430. The foldable support B is integrally folded with the apparatus A. Thereafter, the body of the apparatus A is covered by the cover 600.

On the other hand, the user can utilize the apparatus A as he/she conversely performed the above-described processes as follows: when the cover 600 is uncovered and a portion near the folding unit 260 is downwardly pressed, the upper and lower supports 300 and 400 are unfolded in both directions. At this time,

the springs 500 and 510 allow the upper and lower supports 300 and 400 to be smoothly unfolded.

[Effect of the Invention]

As described above, according to the present invention, as a foldable support is installed to the bed type thermal therapeutic apparatus, the apparatus can be folded thereby. When the thermal therapeutic apparatus is folded, the space which has been occupied by the unfolded thermal therapeutic apparatus can be utilized for other uses. Therefore, the present invention can allow space to be efficiently utilized.

Also, since the thermal therapeutic apparatus can be folded and stored in a cover, when it is stored for a long period and time, it may not be infected by alien substance, such that its life span can be extended.

Additionally, since the thermal therapeutic apparatus is foldable and then carried to the user, it does not requires a skilled person to install the apparatus. The user can easily and simply install the apparatus in his/her desired place.

It is to be understood that, the invention is never restricted to that embodiment and a variety of modifications and alterations which would be possible to a skilled man in the art by referring to the description or drawings presented here and within the spirit of the invention and thus those modifications or alterations are to fall within the scope of the invention, which the scope should be limited only by the attached claims.

WHAT IS CLAIMED IS:

1. A thermal therapeutic apparatus (A) being used as a bed which includes an upper treatment mat (100) on which the upper body of a user is located, and a lower treatment mat (110) on which the lower body of the user is located, in which a backbone adjustment device (130) is installed on the upper treatment mat (100) to allow treatment elements (120) shaped as a roller or an acupressure ball to reciprocate back and forth, and the lower treatment mat (110) is coupled to the lower portion of the upper treatment mat (100), wherein the thermal therapeutic apparatus (A) is integrally connected to an upper end of a foldable support (B), such that it can be folded by the foldable support (B) to be kept.

2. The apparatus according to claim 1, further comprising a cover (600) to cover and store the folded thermal therapeutic apparatus (A) therin

3. The apparatus according to claim 1, wherein the foldable support (B) is divided into a middle support (200) which is vertically located at the center and functions as a middle leg to support a hinged portion in a state where it is unfolded, and a upper support (300) and a lower support (400) which are separated to both sides with respect to the middle support 200 to couple to hinges (250, 251), and stands upright while they are downwardly folded with respect to the middle support 200 when being folded.

4. The apparatus according to claim 3, further comprising springs (500, 510) whose both ends are each connected between the lower end of the middle support (200) and the upper ends of the upper and lower supports (300, 400),

wherein the springs (500, 510) assist the apparatus (A) to perform smooth and safe folding and unfolding operations.

5. The apparatus according to claim 3, wherein the middle support (200) comprises a middle frame (210) of a certain length, a folding unit (260) formed at both sides of the middle frame (210) to allow the upper and lower supports(300, 400) to be pivotally coupled to each other, and a support frame (220), which is vertically coupled to the lower portion of the middle frame (210), for supporting the hinged portion in a state where the support frame (220) is positioned at the bottom while the apparatus is unfolded.

6. The apparatus according to claim 5, wherein the folding unit (260) comprises an inner hinge plate (230) which is fixed and attached to both sides of the middle support (200), and an outer hinge plate (240) which is pivotally coupled to the upper and lower supports (300, 400) using the hinges (250, 251) when the upper and lower supports (300, 400) are connected to the inner hinge plate (230) using the hinges (250, 251), such that the upper and lower supports (300, 400) can smoothly and safely perform hinge operations.

7. The apparatus according to claim 3, wherein:

one end of the upper support 300 is coupled to the folding unit (260) by the hinge (250); and

another end of the upper support (300) is integrally formed with a fixing leg (310) having a wheel (320).

8. The apparatus according to claim 3, wherein:

one end of the lower support (400) is coupled to the folding unit (260) by the hinge (251); and

another end of the lower support (400) has a foldable leg (410) whose upper end is connected thereto such that the foldable support (B) can be vertically folded when the apparatus is folded,

wherein the foldable leg (410) forms at least two wheels (420, 421), spaced apart from each other at a certain distance, at the lower end.

9. The apparatus according to claim 7 or 8, wherein the upper and lower support (300, 400) are formed to have different lengths, in which the upper treatment mat (100) is fixedly coupled to the upper support (300) and the lower treatment mat (110) is fixed and coupled to the lower support (400), respectively.

[Drawings]